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January 20, 2012

Mr. Ray Klimcsak
U.S. Environmental Protection Agency – Region 2
290 Broadway 19th Floor
New York, New York 10007-1866

RE: Response to USEPA and NJDEP October 13, 2011 Groundwater Comments, March 1, 2011 *Evaluation of Soil, Sediment, Surface Water and Groundwater Results, and Proposal for Additional Site Characterization* and June 1, 2011 *Work Plan for Additional Groundwater Characterization*

Revised Work Plan for Additional Groundwater Characterization
Sherwin-Williams/Hilliards Creek Site- Former Manufacturing Plant
Gibbsboro, New Jersey
Administrative Order Index No. II CERCLA-02-99-2035

Dear Mr. Klimcsak:

In a letter dated October 13, 2011, The Sherwin-Williams Co., Inc. (Sherwin-Williams) received comments from the United States Environmental Protection Agency (EPA) and the New Jersey Department of Environmental Protection (NJDEP) on two documents prepared for the Former Manufacturing Plant (FMP) area of the Hilliards Creek Site: 1) The March 1, 2011 *Evaluation of Soil, Sediment, Surface Water and Groundwater Results* (Data Evaluation Report)*, and Proposal for Additional Site Characterization;* and 2) The June 1, 2011 *Work Plan for Additional Groundwater Characterization* (Groundwater Work Plan). The EPA letter was received by Sherwin-Williams on October 17, 2011.

Subsequently, Sherwin-Williams met with the EPA and NJDEP on November 3, 2011 and November 14, 2011 to discuss the comments. Sherwin-Williams also conducted a site walk of the Seep Area on November 2, 2011, for both EPA and NJDEP. It was concluded during these meetings that Sherwin-Williams would initially provide to the EPA a revised work plan to conduct the supplemental groundwater investigation in order to expedite the shallow groundwater sampling program, and submit the revised work plan for the supplemental soil investigation as a separate submittal. Sherwin-Williams submitted to EPA on November 11, 2011 a request for an extension to submit the

revised work plans. In a January 5, 2012 letter, EPA approved the request to submit both revised work plans by January 31, 2012.

This Response to Comments addresses the EPA and NJDEP groundwater-related comments for both the March 1, 2011 Data Evaluation Report and June 1, 2011 Groundwater Work Plan. Because the October 13, 2011 comment letter contained comments applicable to both soil and groundwater, the portions of that letter that pertain to the groundwater investigation have been excerpted so that the responses can be incorporated into the revised Groundwater Work Plan, which is included with this response to comments.

Consistent with the October 13, 2011 comment letter, our comments have been organized as "General" and "Specific" comments. The EPA and NJDEP comments are presented in *italics* followed by the Sherwin-Williams response. The general comment response is presented below, as it forms the basis for the other comments and responses. The specific comments and responses are provided in Attachments 1 and 2 that follow.

Attached to this Response to Comments is the Revised FMP Groundwater Work Plan. Included with the revised text is a CD containing electronic copies of the tables and figures included in the June 2011 FMP Groundwater Work Plan. Also included on the CD are a revised Figure 14, which has been updated to include the shallow groundwater sampling locations and the locations of additional monitoring wells requested by the EPA, and a new Figure 15 that provides a decision-making matrix for evaluation of the innovative investigation technologies. Note that a hard copy of revised Figure 14 is also provided for ease of review. New Tables 8, 9 and 10 summarizing the sampling and analytical parameters for the proposed supplemental groundwater investigation are included with this Revised FMP Groundwater Work Plan and are provided electronically on the attached CD. The CD also includes two appendices: Appendix A is a technical paper on arsenic, previously provided to the EPA, and Appendix B is the schedule for implementation of the groundwater investigation. The full text of the Revised FMP Groundwater Work Plan is also included on the CD.

General Comments - Cover Letter, page 2

- *Evaluation of all of this data confirms that free-product contamination and product releases are still present and occurring. It also raises the question of whether standard soil sampling and analysis is the best approach to characterize the nature and extent of the free-phase product. Therefore, EPA is requesting that a shallow groundwater sampling/characterization effort be utilized to better characterize the horizontal and vertical extent of this free-phase product.*

Response: As presented in the Data Evaluation Report and Groundwater Work Plan, and discussed further at the November 3, 2011 meeting, Sherwin-Williams agrees that free-product contamination is present at the site. This observation is supported by the ongoing recovery efforts within the Seep Area and the occasional observation of relatively low levels of product in shallow monitoring wells located in the Former Tank Farm A area. Additionally, as discussed in the Data Evaluation Report and Groundwater Work Plan, and presented in the November 3, 2011 meeting, historic free product screening and historical and recent soil sampling data support a conclusion that residual product is also present.

Sherwin-Williams does not, however, agree that the data support a conclusion that product releases are still occurring. Recovery efforts in the Seep Area have been successful in preventing the discharge of accumulated product to Hilliard Creek, and it is Sherwin-Williams' opinion that there is no evidence that there are any ongoing discharges of petroleum to the subsurface. However, the supplemental sampling that will be conducted will provide further data to support conclusions regarding whether free product releases are still occurring.

The benefits and disadvantages to using the shallow groundwater investigation techniques as opposed to collecting additional soil data for residual product delineation were discussed at the November 3, 2011 and November 14, 2011 meetings. As discussed, Sherwin-Williams has concluded that, with exceptions described in the Groundwater Work Plan, there are adequate data to define both the characteristics and extent of the residual petroleum. However, Sherwin-Williams understands EPA's objectives for the shallow groundwater investigation and has therefore included in the revised Groundwater Work Plan, provided for EPA review, a proposal to conduct the requested shallow groundwater screening.

- *Please submit a Work Plan for the additional remedial investigation sampling within 30 days of receipt of this comment memorandum.*

Response: On November 11, 2011, Sherwin-Williams requested a 75-day extension to January 31, 2012 for submission of the revised Work Plan. The extension approval was provided in an EPA letter dated 5 January 2012.

The revised Groundwater Work Plan addresses the EPA and NJDEP comments. In particular, the requested shallow groundwater investigation has been incorporated and the results will be used, as appropriate, to inform decisions regarding the remainder of the groundwater investigation.

Should you have any other recommendations or if you have any questions or comments, please do not hesitate to contact me at (216) 566-1794 or via e-mail at mlcapichioni@sherwin.com.

Sincerely,

Mary Lou Capichioni
Director Remediation Services

Encls.

cc: J. Josephson, EPA (New York)
W. Sy, EPA (Edison)
L.Vogel, NJDEP, (4 copies)
P. Parvis, HDR
N.McFadden, Brandywine
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B. Katcher, Manko, Gold, Katcher & Fox, LLP
J. Gerulis, Sherwin-Williams (w/o enclosures)
A. Danzig, Sherwin-Williams (w/o enclosures)
S. Peticolas, Gibbons, Del Deo, Dolan, Griffinger, & Vecchione (w/o enclosures)
H. Martin, ELM
R. Mattuck, Gradient
S. Jones, Weston Solutions
S. Clough, Weston Solutions
A. Fischer, Weston Solutions

Attachment 1

EPA's Review of the *Evaluation of Soil, Sediment, Surface Water and Groundwater Results, and Proposal for Additional Site Characterization* dated March l, 2011 and *Work Plan for Additional Groundwater Characterization* dated June 1, 2011

Request for Shallow Groundwater Sampling Effort

- *EPA is requesting that a shallow groundwater sampling effort be employed. The sampling protocol should utilize a direct-push technology sampler, in which two (2) shallow groundwater "grab" samples are collected and sent to the laboratory for analysis. Ideally, one sample should be collected at the water table and another collected 10 feet below that. EPA is requesting that a fast-turn around analysis be performed on the samples and that EPA be sent copies of the preliminary data when available. Ultimately the data should undergo standard validation and be incorporated into the submittals. The aqueous samples should be analyzed for volatile organic compounds and semi-volatile organic compounds (SVOCs). EPA has selected locations for the shallow groundwater points and they will be discussed below in the areas which were used to define (study) boundaries in the March 2011 Sherwin-Williams/ Hilliards Creek Site- Former Manufacturing Plant (FMP) Report.*

Response: Sherwin-Williams will conduct the shallow groundwater sampling program as requested by EPA. The objectives of this sampling are to further characterize the nature, and define the horizontal and vertical extent, of the residual Light Non-Aqueous Phase Liquid (LNAPL) and other contaminants present at the Site. The data collected from the shallow groundwater sampling event will also be used to evaluate the placement of the proposed additional permanent shallow groundwater monitoring wells. Shallow groundwater sampling and analysis will be conducted as described in the revised Groundwater Work Plan, see attached. The sampling and analysis is summarized below.

Groundwater samples will be collected from two intervals at each location: at the water table interface (at the 0.0’ – 0.5’ interval), and at the 9.5’ - 10.0’ interval below the water table interface. EPA has selected each of the locations for these shallow groundwater samples. These locations have been distributed throughout the study areas defined in the Data Evaluation Report. It is understood that the total number of shallow groundwater points installed may increase should the receipt of analytical data from this groundwater screening effort indicate the need to establish additional locations.

Soil samples will also be collected at each groundwater sampling location at intervals corresponding to the groundwater collection elevations. The soil samples will be screened for the presence of LNAPL and submitted for laboratory analysis.

Sherwin-Williams will also utilize a photoionization detector (PID) to field screen the cores at each location. As discussed with EPA, the PID results provide a line of evidence to identify the presence and extent of residual product. Observations of sheens, product and odors will also be noted.

Additionally, as discussed with EPA, Sherwin-Williams is concerned that the groundwater collection technique could result in false positives, where constituents are reported at concentrations greater than their respective screening criteria when, in fact, they are not present in the dissolved phase at these levels. This is of concern particularly for the SVOCs, which tend to sorb to the soil matrix and be entrained in the sample when collected. Therefore, both filtered and unfiltered samples will be collected and evaluated.

All soil and unfiltered groundwater samples will be submitted for Target Compound List (TCL) Volatile Organic Compounds (VOCs); TCL SVOCs and Total Organic Carbon (TOC). The filtered groundwater samples will be analyzed for TCL SVOCs and TOC. As discussed during the November 3, 2011 meeting, all samples will be submitted for analysis using the standard 4 week turnaround time. Preliminary analytical data will be forwarded to EPA upon receipt; however, this preliminary data will not be reviewed or validated prior to this expedited submission to EPA. The data packages will, however, be validated as per the approved Sampling Analysis Plan/Quality Assurance Project Plan (SAP/QAPP), but not before EPA is provided the data. The results of the data generated from this event will be reviewed in consultation with EPA to determine whether there is a need to modify the supplemental groundwater investigation scope of work.

Sherwin-Williams has included in the Revised FMP Groundwater Work Plan, the use of several innovative site characterization techniques that will be conducted in combination with the shallow groundwater screening to provide a more refined understanding of the distribution of constituents across the FMP and inform the geologic and hydrogeologic conceptual models. These innovative site characterization techniques are described in depth in the Revised FMP Groundwater Work Plan.

I. Former Resin Plant and Material Storage Area

- *Requested Shallow Groundwater Sampling – Review of all of the data generated to date reveals that there is an area that has not been characterized. The area is bounded from MPSB004 on the west and to MPSB0001 on the east, then from MPSB003 to the north and to MPSB0012 to the south. Several historic groundwater screening samples had exceedances for BTEX (Benzene, Toluene, Ethylbenzene and Xylene): SGW-208 and SGW-282. Others in the areas were either of lower BTEX concentrations SGW-206; not sampled SGW-202 and SGW-284; or were below detection limits: SGW-200 and SGW-204. In this area, EPA is requesting that four points (2 samples – one at the water table and one 10 ft. beneath that) be*

advanced and that groundwater samples be analyzed for both VOCs and SVOCs. One specific location should include the location which depicts a possible buried Benzene tank/vault was located near historic building No. 24 on Figure "Factory Insurance Association."

Response: Sherwin-Williams will conduct the shallow groundwater investigation as requested by EPA. Shallow groundwater samples and soil samples will be collected at four locations as presented on Figure 14 from the revised Groundwater Work Plan. As directed by EPA, one set of samples will be collected from the location near historic building No. 24.

As discussed at the November 3, 2011 meeting, the historic groundwater screening data were collected in the mid- to late 1990's and are not likely to be representative of current conditions. A comparison of groundwater data collected from groundwater monitoring wells throughout the FMP shows significant reductions in target VOCs, and it can be predicted that similar reductions in target VOCs has also occurred in the Former Resin Plant Area.

II. Former Tank Farm A

- *Proposed Soil Sampling – In lieu of collecting soil samples from the two locations proposed, EPA is requesting shallow groundwater sampling.*

- *Requested Shallow Groundwater Sampling – EPA agrees that there is a need to conduct additional investigation activities at the locations identified in Section 4.2.1, page 4-4 of the March 2011 Report; however, rather than conducting soil sampling, EPA is requesting shallow groundwater sampling. EPA is requesting that the sampling be performed at the specified locations; however, two aqueous samples should be collected for analysis at both the water table and at 10 ft below this interval. In addition, EPA is requesting two additional groundwater sampling points within the footprint of Former Tank Farm A.*

Response: Sherwin-Williams will conduct the shallow groundwater sampling as requested by EPA. The four shallow groundwater sampling locations are shown on Figure 14 from the revised Groundwater Work Plan. These include:

- Two locations south of historic soil boring MPSB0081 and southeast of historic soil boring MPSB0013.
- Two locations within the footprint of Former Tank Farm A.

Groundwater and soil samples from these locations will be collected and analyzed as previously discussed.

III. Main Plant Area

- *Main Plant Area Requested Shallow Groundwater Sampling – Approximately 7 locations should be advanced within the former Main Plant area. Four can be placed within the area of 2 and 4 Foster Avenue. In addition, "Factory Insurance Association" figure shows a historic 22,000 gallon fuel oil tank. A sample should be advanced within this vicinity this, as well as (using the following figure: "Tank Schedule Historic") shows a railroad car lacquer filling station directly outside Historic Building No. 57. Approximately two samples should be placed in this vicinity.*

Response: Sherwin-Williams will conduct the shallow groundwater sampling requested by EPA. The seven shallow groundwater sampling locations are shown on Figure 14 of the revised Groundwater Work Plan. The locations include:

- Four locations within the area of 2 and 4 Foster Avenue.
- One location in the vicinity of the historic 22,000 gallon fuel oil tank depicted on the "Factory Insurance Association" map.
- Two sample locations in the vicinity of the historic railroad car lacquer filling station outside of Building No. 57 as depicted on the "Tank Schedule Historic" figure.

Groundwater and soil samples from these locations will be collected and analyzed as previously discussed. Additional soil sampling proposed for the Main Plant Area for the purpose of delineating arsenic, lead, polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs) will be conducted at a later time, as will be proposed in the revised soil sampling work plan, which will be submitted to EPA by January 31, 2012, in a separate submittal.

IV. Former Tank Farm B

- *Shallow Groundwater Sampling – Shallow groundwater sampling may be better suited to determine the presence and extent of pentachlorophenol. Pentachlorophenol was found in MW's 17 and 18 (DTW was roughly 5.32 and 8.88, respectively, in the Fall 2009). Approximately 3 sampling locations would be proposed to characterize this area.*

Response: Sherwin-Williams will conduct the shallow groundwater sampling as requested by EPA. The three shallow groundwater sampling locations are shown on Figure 14 from the revised Groundwater Work Plan. It is to be noted that saturated soil sampling was proposed for this area because of the pentachlorophenol in groundwater referenced in the EPA comment, while the soil samples obtained from the unsaturated zone did not contain pentachlorophenol. The intent was to determine if pentachlorophenol was present in saturated soil at concentrations that could be considered a source of the dissolved-phase pentachlorophenol. As Sherwin-Williams is

proposing to conduct saturated soil sampling as part of the shallow groundwater screening, this objective will be achieved during this portion of the investigation.

V. Seep Area

- *Shallow Groundwater Sampling – EPA is requesting that approximately seven locations be advanced to determine the extent of shallow groundwater contamination. One should be placed on the eastern side of 2 Foster Avenue, approximately (directly) across from MPSB0061. Another should be placed approximately in the middle of locations MPSB0084 and MPSB0086. The soil sample which was proposed near MPSB0047 can be converted into a groundwater sampling point. Approximately 2 should be placed within the Seep Area, which appears to not have been sampled before. The proposed soil sample that is to the south of MPSB0018 should be relocated to historic shallow groundwater sample (SGW) location SGW-12. The proposed soil sample location that is to the west of MPSB0018 should be converted into a shallow groundwater sampling location.*

Response: Sherwin-Williams will conduct the shallow groundwater sampling as requested by EPA. The seven locations are shown on Figure 14 from the revised Groundwater Work Plan. These locations include:

- One location on the eastern side of 2 Foster Avenue, directly across from MPSB0061.
- One location at the approximate midpoint of locations MPSB0084 and MPSB0086.
- One location near MPSB0047.
- Two locations within the Seep Area.
- One location south of historic shallow groundwater sample location SGW-12.
- One location west of MPSB0018.

Groundwater and soil samples from these locations will be collected and analyzed as previously discussed.

VI. Former Lagoon Area

- *Shallow Groundwater Sampling – Pentachlorophenol was the primary compound found in the vicinity of the former lagoon area during soil sampling activities. Historic groundwater sampling (mainly deeper aquifer) did reveal the presence of benzene (collected from HP-A, HP-B, HP-C, HP-D, and HP-G). As an alternative to additional soil sampling, EPA is requesting that aqueous samples be collected from the shallow groundwater. EPA is requesting that 4 shallow groundwater sampling locations be advanced.*

Response: Sherwin-Williams will conduct the shallow groundwater sampling as requested by the EPA. These locations are shown on Figure 14 from the revised Groundwater Work Plan.

The results of the soil sampling conducted as part of this shallow groundwater investigation will be evaluated to assess whether the soil sampling proposed in the Data Evaluation Report, which was designed to complete vertical and horizontal delineation of the pentachlorophenol in soil to the RDCSRS, is necessary.

VII. Former Tavern/Gas Station and Eastern Off-Site Area

- *Shallow Groundwater Sampling – In total, five soil sampling locations were proposed for sampling. In lieu of soil sampling, EPA is requesting that all 5 proposed locations be advanced as shallow groundwater sampling locations.*

Response: Sherwin-Williams will conduct the shallow groundwater sampling as requested by EPA. The shallow groundwater sampling locations are shown on Figure 14 from the revised Groundwater Work Plan.

- *Requested Clarification – Throughout the FMP Report there is discussion of the extent of "residual petroleum contamination"; however, in the section in which the former tavern/gas station is discussed, it is distinctly cited that naphthalene and residual petroleum contamination is present and needs to be delineated. Naphthalene is present throughout many of the other areas (Resin Plant, Tank Farm A, etc.) along with other contaminants, but Naphthalene is not discussed separately. The reason that it is here, should be explained.*

Response: At locations MPSB0077, MPSB0078 and MPSB0081, naphthalene was present at concentrations greater than the RDCSRS. No samples were present to the east of these locations to provide delineation of the naphthalene. Therefore, specific delineation for naphthalene was proposed. Specific delineation for naphthalene was also proposed in the Seep Area, south and west of MPSB0018 and east of MPSB0047.

In other areas where naphthalene was found at concentrations greater than the RDCSRS, other samples were available to provide horizontal delineation. Therefore, there was no need to propose sampling to specifically delineate the naphthalene.

Additional Groundwater Monitoring Work

- *EPA has requested a shallow groundwater sampling program, in which aqueous samples are to be collected from proposed locations at two distinct depths. EPA is requesting that these samples be analyzed for VOC, SVOCs, and Total Organic Carbon (TOC) and that preliminary data be provided to EPA on a rapid basis. In general, EPA agrees with the groundwater proposal by Sherwin-Williams, but is*

requesting that the shallow groundwater sampling program be performed first (prior to collecting any soil sampling discussed earlier, or installation of additional wells). EPA and NJDEP will review the data and may make additional requests to the monitoring well locations.

Response: The requested shallow groundwater sampling program will be conducted by Sherwin-Williams. The laboratory analyses will be performed on a standard turnaround basis, and Sherwin-Williams will provide to the EPA and NJDEP the results when the data are received from the laboratory (laboratory reports). Subsequent data validation and evaluation will be conducted and the normal process for submission of validated data via MEDDs will be followed.

Specific Groundwater Comments on "Work Plan for Additional Groundwater Characterization", June 2011.

1. *EPA is requesting that in addition the wells currently proposed downgradient of the benzene plume, that a nested well be placed (approximately southwest of MW-41), as this would be located along the axis of the plume.*

Response: Sherwin-Williams will install the additional wells as requested by EPA. The locations are shown on Figure 14 from the revised Groundwater Work Plan. As per the November 21, 2011 e-mail from Mr. Ray Klimcsak to Mr. Art Fischer, the screened intervals are to be chosen by Sherwin-Williams. Based on the boring logs for MW-39, MW-41 and MW-42, the most probable screen intervals will be immediately above and immediately below the silty clay (Unit 2) separating the silty sand (Unit 1) from the fossiliferous sand (Unit 4). Based on the boring logs, the shallower well would be screened from approximately 35’ – 45’ below ground surface, and the deeper well would be screened from approximately 70’ – 80 below ground surface.

2. *Page 3, Section 2.1.1 – The geology description refers to "Units" which are described as "Fine-grained". Please add more standard geologic terminology. For instance, is it fine- grained within the "sand" range, or fine-grained within the "silt" range? Please correct this terminology on Figure 4 as well. Also, please specify what the depth to bedrock is, if present.*

Response: No revisions to the descriptions in the text or figures will be made at this time. As presented by Weston in the November 3, 2011 FMP Informational Session, the site geologic/hydrogeologic framework is in the process of being refined based on published information available since 2008 and the results of work proposed in the “Work Plan for Additional Groundwater Characterization”. The future refined geologic/hydrogeologic framework will include more standard geologic terminology. The depth to crystalline consolidated bedrock is approximately 1,200 feet below ground surface (ft bgs).

3. *Page 4, Section 2.1.2 – This section discusses three hydrostratigraphic units, but it does not correlate these units to the geologic units in Section 2.1.1. For example, please clarify whether the "Composite Confining Bed" is part of geologic Unit 1, 2, 3, or 4? Somewhat complicating matters is the fact that the monitoring wells described in Section 2.2 are designated Shallow, Intermediate, and Deep. It is difficult to determine if the "Composite Confining Bed" is located in the Shallow, Intermediate, or Deep well completion depths? The text is not consistent in its use of terminology and naming systems. For example, one section will discuss "Unit 3" wells. Another will use the term "Intermediate." Please utilize one terminology system throughout the text. In addition, please insure that the proposed well depths are clearly identified within this consistent nomenclature.*

Response: As discussed at the November 3, 2011 meeting, the conceptual model for the site hydrogeology is under evaluation based on a detailed review of both site-specific information, such as well boring logs, and regional hydrogeology information. The additional information that will be collected during the supplemental groundwater investigation will be used to further refine the model for the site hydrogeology.

Therefore, at this time, some of the questions in this comment cannot be directly answered. For example, as discussed at the November 3, 2011 meeting, the current evaluation of site hydrogeology supports the conclusion that all wells installed at the site may be screened in the Composite Confining Unit. The additional information to be collected as part of the supplemental investigation will be used to refine the geologic/hydrogeologic model and will assist in validating or refuting this concept. Consistent terminology and naming systems will be used for the refined geologic/hydrogeologic framework. An explanation of how the framework has evolved as new data and information became available will also be provided.

With regard to the well identifiers, the text will be clarified to provide the reader with a better understanding of the well depths. However, it is to be noted that the selected terminology was chosen for specific reasons. The geologic units in which the wells are installed were provided so that the reviewer would have a context for the geology for each well. The terms “Shallow, Intermediate and Deep” were selected to provide a context for the depths at which each well was installed and to provide the ability to discuss groundwater chemistry and flow in a logical manner.

4. *Section 2.1.2- In addition, please clarify the following points:*
   - *What is the depth of the Kirkwood-Cohansey aquifer?*
   - *Is the Vincentown aquifer Unit 4? It would be clearer if units are used along with the names.*
   - *What is the anticipated depth of the bottom of the Vincentown aquifer?*
   - *Does either of these aquifers supply potable water in the area?*

Response: As discussed above, the conceptual model for the site hydrogeology is being evaluated. The Kirkwood-Cohansey Aquifer material at the site appears to be surficial, thin, and unsaturated; and the Vincentown Aquifer does not appear to be present. As discussed in the November 3, 2011 meeting, the current data support the conclusion that local, domestic potable wells probably obtain groundwater from the Wenonah-Mount Laurel Aquifer (approx. 175-200 ft bgs; and the community public supply wells withdraw water from the deep Englishtown Aquifer (approximately 250 ft bgs) and Potomac-Raritan-Magothy Aquifer System (>1,000 ft bgs). An explanation of the encountered and anticipated aquifers present between the ground surface and crystalline bedrock will be finalized as part of the refined geologic/hydrogeologic framework.

A total of eight potable/irrigation wells have been sampled since 2005 during the course of the investigation. No constituents have been found in the wells at levels greater than the screening criteria. In cases where the property owner has been able to produce the drillers' well logs, the potable wells are typically screened at approximately 200 ft bgs which is much deeper than the existing monitoring wells which are screened at approximately 80 ft bgs.

5. *Section 2.2 – Please clarify the following points:*
   - *Are the designations Shallow, Intermediate and Deep Groundwater related to the physical or hydraulic characteristics of the aquifer or just a relative depth?*
   - *Describe the rationale behind the designations of Shallow, Intermediate, and Deep.*
   - *Does coverage of different units extend to the average hydraulic testing which was performed?*

Response: The designations "Shallow, Intermediate and Deep" are related only to the relative depth. However, the Shallow and Intermediate wells are installed in geologic Unit 1, while the Deep wells are installed in geologic Units 2, 3 and 4.

The designations were chosen based on observed chemistry and geology. As discussed in the Data Evaluation Report and the Groundwater Work Plan, conditions in the Shallow and Intermediate wells are to a large extent related to historic discharges at and near the surface, including the residual petroleum contamination, pentachlorophenol in the former Lagoon Area, and localized changes in geochemistry that affect the partitioning of arsenic. The Deep wells, however, are more defined by the presence of elevated levels of benzene, which is the subject of further studies to assess the probable source.

Consideration was given to using only two designations, "Shallow" and "Deep", and included all wells installed in geologic Unit 1 as Shallow wells. However, as discussed in the Groundwater Work Plan, the chemistry of the groundwater collected from wells installed at the base of geologic Unit 1 is different than groundwater collected from either

the wells installed at the top of the water table or the wells installed in geologic Units 2, 3 or 4. Therefore, the three designations were chosen.

Hydraulic testing is planned for wells installed in all of the geologic units. When completed, there should be a better understanding of the hydraulic conductivity in each geologic unit.

6. *Section 3.1.3 – EPA disagrees with the statement that benzene does not have to be further delineated to the west of MW-15 and MW-20. Benzene levels are 5 times the standard.*

   In addition, please correct the last paragraph on Page 11, Section 3.1.1 to reflect that MW-13R is located in the northeastern portion of the Seep Area. Change west to east relative to U.S. Avenue in the second sentence.

Response: As presented in the Groundwater Work Plan, the benzene found in MW-15 and MW-20 ranged from 3 micrograms per liter (ug/l) – 16 ug/l, relatively low levels in comparison to the Groundwater Quality Standards (GWQS) (1 ug/l) for benzene. Additionally, benzene levels in MW-15, where the highest concentration of benzene (16 ug/l) was found, has declined significantly since sampling began in the early 1990's.

However, shallow groundwater screening is planned for this area, and the results of the shallow groundwater screening are expected to provide supplemental data with regard to the distribution of benzene to the west of MW-15/MW-20. These results will be reviewed with EPA and used to support a decision regarding the need for additional monitoring wells west of MW-15/MW-20.

The changes to the text requested by the EPA have been made.

7. *Page 11, Section 3.1.4 – Sherwin-Williams poses the question of "why are the arsenic concentrations in the groundwater so high?" One hypothesis presented is that the Eh/pH condition created by the extremely high concentrations of organic carbon is converting naturally-occurring arsenic to a more soluble form. EPA concurs that this is a plausible scenario, but to prove it, Sherwin-Williams must conduct arsenic speciation and compare the phase relationships. The more soluble forms of arsenic are actually more toxic, so this information is also useful to the human health risk assessors.*

Response: Sherwin-Williams has concluded, based on a review of the literature regarding arsenic behavior in groundwater, the relatively low concentrations of arsenic in groundwater at the FMP, and the risk assessment procedure for arsenic, that speciation of the arsenic in shallow groundwater is unnecessary and will provide little additional information that can be used in making remedial decisions.

The literature documents the fact that oxidation/reduction (redox) conditions strongly influence the solubility and mobility of arsenic. At the November 3, 2011 meeting, Sherwin-Williams provided to the EPA and NJDEP the paper "*Attenuation of Naturally Occurring Arsenic at Petroleum Hydrocarbon-Impacted Sites*" (R.A. Brown et. al, 2010). This paper, presented at the Battelle *"Remediation of Chlorinated and Recalcitrant Compounds"* conference in 2010, describes the mechanism by which the presence of petroleum compounds creates reducing conditions and mobilizes naturally-occurring arsenic. As presented in the paper (included on the enclosed CD as Appendix A), at highly reducing conditions (iron reducing to methanogenic conditions) the arsenate (As V) is reduced to arsenite (As III). However, as redox conditions return to normal, the arsenite is oxidized to arsenate, and arsenic levels decline. The paper, and other literature regarding the behavior of arsenic in the subsurface, documents the processes that are occurring in groundwater at the FMP.

The field parameter data collected during the most recent two rounds of groundwater sampling support this conceptual model:

- With the sole exception of the November 2009 results from MW-SCAR, no monitoring well in which positive redox conditions were measured (MW-18, MW-23, MW-24, MW-28, MW-34, MW-37, MW-38, MW-39, MW-41) contained arsenic at concentrations greater than the GWQS (3 ug/l). Even the November 2009 results from MW-SCAR (5.3 ug/l) were less than the MCL (10 ug/l) and may be a function of the reduced pH (4.3) measured in November 2009.

- The only wells in which the MCL was exceeded (MW-4, MW-11, MW-12, MW-21 and MW-27) had negative redox values.

- The only wells in which the GWQS for arsenic was exceeded also had negative redox values.

Further, the concentrations of arsenic in groundwater are relatively low. Although greater than the NJDEP Class IIA GWQS of 3 ug/l, the concentrations are below, or approach, the federal Maximum Contaminant Level (MCL) for arsenic of 10 ug/l. The highest measured concentration of arsenic was 14.8 ug/l (MW-21, August 2010).

Finally, there is no mechanism under currently accepted risk assessment practices for arsenic to utilize multiple toxicity factors to account for the valence state of the arsenic. There is one accepted toxicity factor for arsenic, and it will be used in the risk assessment.

Speciation of arsenic requires special sampling and field preservation methods, and, while feasible, is difficult. Since the literature documents the effects of redox conditions on arsenic solubility and mobility, the concentrations of arsenic in groundwater at the FMP achieve or approach the MCL, and there is no real mechanism to use the

speciation data in the risk assessment for arsenic, Sherwin-Williams requests that EPA reconsider the requirement to conduct the speciation.

8. *Section 3.1.5 – The presence of styrene is not mentioned or discussed here. Naphthalene and styrene are associated with resins and this area could be a possible source. EPA has requested a shallow groundwater sampling program to confirm this.*

Response: The revised Groundwater Work Plan provides a discussion of the styrene results. During the most recent sampling events, styrene was found at a concentration greater than the screening criterion in one well, MW-24, during one sampling event, August 2010. The concentration (170 ug/l) was slightly greater than the GWQS (100 ug/l) and is approximately half of the concentrations observed in 1993, when monitoring began.

Sherwin-Williams will conduct the shallow groundwater sampling as requested by EPA.

9. *Page 15, Section 3.2 – In the report, Sherwin-Williams provides their analyses for the source of the deep aquifer benzene plume, presenting a case for both an on-site source and an off-site source. All the lines of evidence are based upon the fact that there are lower benzene concentrations in the shallow horizons than in the deeper. For old spills (and this spill could date back to the 1800's), there are generally lower concentrations in the shallow, oxygen-rich horizons due to biodegradation. In order to confirm whether the FMP is the source, or if there is an off-site source, EPA is requesting that Sherwin-Williams analyze the groundwater samples for natural attenuation parameters as part of the investigation. This testing should be conducted vertically to compare the shallow groundwater indicators with the deep.*

Response: As discussed in the FMP Groundwater Work Plan, a full range of natural attenuation parameters will be collected during the sampling of all wells.

10. *Page 26, Section 4.2.1.3 – Based on the historical use map, the proposed upgradient wells seem to be co-located with former varnish drum storage, lab storage, misc storage, and drums of waste oil. Please move the proposed upgradient wells to hydrogeologically correct upgradient locations.*

Response: The well locations proposed in the Groundwater Work Plan were approximate locations only and were selected to be in a hydraulically upgradient location. The well locations may be modified as necessary to ensure that they are not located in an area that could potentially bias the results, or additional wells may be installed upgradient of the currently proposed locations. It is noted that additional access may be needed if the wells are installed north of the FMP property.

11. *Section 4.3 – The work plan calls for slug tests to obtain "the average hydraulic conductivity in the four geologic units." Units three and four would have only two tests performed which is not an ideal average. Consider additional locations.*

Response: The wells selected for hydraulic testing are intended to provide information for all geologic units as defined in the "*Work Plan for Additional Groundwater Characterization*", as well as provide coverage across the FMP. No revisions to the proposed list of wells for hydraulic testing are proposed at this time. The results of the proposed hydraulic testing results will be used to assist in refining the geologic/hydrogeologic framework. In the November 3, 2011 FMP Informational Session, Weston explained that preliminary analysis strongly suggests all the investigation wells drilled to date are screened in the Composite Confining Unit. As a result, the geologic units described in the work plan may change.

12. *Figure 4 – EPA is requesting that the color scale be revised so that it is more intuitive. The unit described as "tan-brown" is not colored tan on the figure. The color tan is used for the formation which is green, and the green color is used for the formation which is blue.*

Response: In future reports Sherwin-Williams will select colors used in cross-section figures that more closely resemble the generalized descriptive soil colors associated with a particular formation.

13. *Figure 8 – It is stated that values in brackets [ ] should not be used; however, a value was provided which happened to be quite different from the other contour lines in the vicinity. Please provide the rationale for this presentation for the contour line in the vicinity of MW-11.*

Response: The groundwater elevation for MW-11 was not used in Figure 8 because it was concluded, based on the history of water levels measured in MW-11, that the April 2011 value was based on an incorrect field reading of the interface probe/water level indicator. The table below lists all the depth to groundwater measurements taken for MW-11 since the implementation of the 2009 FMP Work Plan. The depth to groundwater measurements for MW-11 ranged from 9.95 to 10.52 feet, with the exception of the April 2011 gauging event. During this event, the reported depth to groundwater measurement was 0.93 feet deeper than any other groundwater measurement recorded within the last two years. It is presumed that the actual depth to groundwater for MW-11 during the April 2011 gauging event was likely 10.45 feet (instead of 11.45 feet), with the wrong foot mark being read on the probe. This corrected measurement would be consistent with the groundwater measurement that was recorded the following month, as well as those collected in prior events.

MW-11				
Date	Initial Depth to Product (ft)	Initial Depth to Water (ft)	Initial Product Thickness (ft)	Reason for Measurement
10/16/2009	9.97	10.42	0.45	Development
10/22/2009	10.04	10.05	0.01	Development
12/16/2009	9.46	9.95	0.49	Sampling
8/2/2010	9.81	10.05	0.24	Gauging
8/16/2010	10.06	10.19	0.13	Sampling
2/8/2011	NM	10.49	NM	Gauging
4/14/2011	NM	11.45	NM	Gauging
5/9/2011	NM	10.31	NM	Gauging
8/24/2011	10.34	10.52	0.18	Gauging

14. Figure 12 – Please label the groundwater contours.

Response: Figure 12 presented the benzene concentration isopleths interpolated for the shallow/intermediate monitoring wells. The contour lines should be labeled as 100 ug/l, 10ug/l and 1 ug/l from the higher concentrations to the lower concentrations. Future submissions will include labeling of the contour lines.

Attachment 2

NJDEP's Review of the Evaluation of Soil, Sediment, Surface Water and Groundwater Results and Proposal for Additional Site Characterization dated March 1, 2011 and Work Plan for Additional Groundwater Characterization dated June 1, 2011

General Comments- for March 2011 FMP Report and the June 2011 GWWP

1. *Though both documents reference additional work neither includes a schedule to complete the activities. Pursuant to the Department's TRSR N.J.A.C. 7:26E-4.2(b)1 a workplan shall include a detailed schedule for remedial activities, including time-frames and dates for the start and completion of all field activities; receipt of analytical results, and submission of a report. SW shall include a schedule in the revised sampling plans.*

Response: A schedule for the implementation of the shallow groundwater sampling program and associated groundwater investigation is being submitted with the revised Groundwater Work Plan (see Appendix B).

2. *In addition, neither document includes a proposed sample summary table as required pursuant to TRSR N.J.A.C. 7:26E-4.2(b)6. SW shall revise both documents to include a proposed sample summary table for each media which shall include sample name, location, analytical parameters, proposed sample depth, sample intervals, reason for sampling, etc.*

Response: The proposed sample summary tables are being submitted with the revised Groundwater Work Plan (see new Tables 8, 9 and 10, provided on the CD enclosed with the Revised FMP Groundwater Work Plan).

3. *Comprehensive Analytical Data Tables: Analytical data for both documents are presented in cumbersome tables that are difficult to read in their present form. For example, Table 6 (March 2011 FMP Report) which presents a comprehensive table of soil data is 267 pages long. As a PDF file, Table 6 cannot be reviewed on a computer screen since it is difficult to keep track of the analyte across the row or the sample name down the column. In addition, since the VOC and SVOC TICs are included in the analyte list, there are numerous pages with little or no data, as the TICs were only detected in a handful of samples. The tables shall be revised such that the data for each sample media is separated into individual tables organized by analyte groups (i.e. VOC, SVOCs, metals, pesticides, PCBs, VOC TICs, SVOC TICs, etc.).*

Response: In future reports, a CD containing an Excel spreadsheet of the laboratory analytical data will be provided so that the reviewer can sort and format the data in a manner that is most suitable for their review. The tables referenced above are also being submitted in the same format on the CD included with the revised Work Plan.

4. *Seep Area and Product Plume: The Department finds that neither document references in text or figure the product plume in the area of Foster Ave. and US Ave. for which there is an operating extraction system. The document uses the term Seep Area only as an Area of Concern (AOC) name but does not provide any other detail. The Department acknowledges that these documents reference recent work. However, as an existing site condition, the product plume should have been clearly referenced in the text and depicted on any maps discussing groundwater contamination.*

Response: Comment acknowledged. Additional soil and groundwater investigations are proposed in the document entitled "*Evaluation of Soil, Sediment, Surface Water and Groundwater Results, and Proposal for Additional Site Characterization, Former Manufacturing Plant*" dated March 1, 2010 and the follow-up document entitled "*Work Plan for Additional Groundwater Characterization, Former Manufacturing Plant*" dated June 1, 2011. EPA has also requested additional soil and groundwater investigative work in the EPA Comment Letter dated October 13, 2011 concerning the above-referenced FMP reports.

These investigations will aid in determining the extent of residual product-impacted soils and free-phase product and upon completion of the proposed work, an updated extent of product in soil and groundwater figure will be produced.

Specific Comments – March 2011 FMP Report

8. *Section 3.3.1 Water Levels and Flow Direction, Page 3-24: The document states "Hilliards Creek and Bridgewood Lake are discharge points for groundwater.", however, no additional sampling is proposed. The Department recommends monitoring of Bridgewood Lake for VOCs along the northern boundary as a potential receptor of groundwater contamination.*

Response: Surface water samples were collected in Bridgewood Lake during the September 2005 (dry event), October 2005 (wet event) and July 2011 Burn Site Sampling Program. All samples were analyzed for TCL VOCs, TCL SVOCs, TCL Pesticides/PCBs and TAL Metals.

No VOCs were detected in the Bridgewood Lake samples during any of the sampling events. Only two constituents were detected in Bridgewood Lake, arsenic at a concentration of 10 ug/l (location BWDW0009) during the dry event in September 2005, and an unknown TIC was also detected at a concentration of 2.7 ug/l (location BWDW0010) during the July 2011 event. These two sample locations are presented on the revised Figure 14 accompanying the revised Work Plan.

The detection limits during the 2005 events were typically 10 ug/l and there were no detections noted greater than the NJDEP Surface Water Ecological Screening Criteria. With the increased sensitivity of the analytical methods, the detection limits during the

2011 sampling event were typically 0.5 ug/l and again there were no detections noted greater than the NJDEP Surface Water Ecological Screening Criteria.

A discussion of the 2005 data may be found in the document entitled "*Sherwin-Williams Gibbsboro Sites, Evaluation of Strategic Sampling Results – Bridgewood Lake and the Rail Road Site*" dated August 9, 2006. The July 2011 data are available on TeamLink and will be provided in a future report.

9. *Section 3.3.2.2 Arsenic in Former Resin Plant, Tank Farm A, Gas Station and Seep Area, Pages 3-26 to 3-27: The Department does not dispute the possible influence of Redox values on arsenic speciation and resultant groundwater concentrations. However, elevated concentrations of arsenic have been detected in other areas of the FMP in soils, groundwater and in the downgradient sediment and surface water. Arsenic is clearly a ubiquitous contaminant related to SW former operations. While there is no clear anthropogenic arsenic source areas identified in the soils in this area, in general the former plant operations cannot be ruled out as a source of the elevated arsenic concentrations in the groundwater. As such, further evaluation of arsenic in the groundwater is warranted at the FMP.*

Response: The Department's comment is acknowledged. As presented in the Revised FMP Groundwater Work Plan, additional groundwater monitoring wells are proposed and arsenic will be an analytical parameter for all future groundwater monitoring well sampling that will be conducted at the site. As discussed in response to the EPA Comment No. 7, the arsenic levels in groundwater are relatively low in comparison to the NJDEP GWQS and federal MCL, and downgradient delineation has been achieved.

9. *Section 3.3.3 Groundwater Sampling Results, Deep Groundwater, Page 3-30: The document states "The source of the benzene in the deep groundwater has not been identified." The document also references that the deep borings found no evidence of soil contamination at depth. Further review of the document indicates that the deep borings were drilled near the former production wells and not near MW-30 where elevated benzene concentrations were detected in the groundwater. The document should be revised to clarify the location of the "clean" deep borings relative to the groundwater contamination. The Department finds that additional evaluation of the deep soils near MW-30 is warranted.*

Response: Two "deeper" borings and one deep boring were installed in the vicinity of MW-30. MPSB0014 was installed to a depth of 20 feet and MPSB0005 was installed to a depth of 21 feet. MPSB0013, located in the northeast portion of the former Tank Farm A area was installed to a depth of 59.5 feet. As presented in the Groundwater Work Plan, an additional deep well is proposed in the vicinity of MW-30, and soil samples will be obtained during installation.

Specific Comments- June 2011 GWWP

1. *Section 3.1.3 Benzene in Former Resin Plant, Tank Farm A, Gas Station and Seep Areas Page 11: The document states "No additional characterization to the west of MW-15 and MW-20 is proposed." The Department does not agree. Additional characterization is needed to define the western edge of the benzene in the shallow groundwater. In addition, the Department recommends the installation of a shallow well or piezometer between Former Bldg Nos. 57 and 82 and 10 Foster Avenue to further refine the groundwater contour maps on the west side of the FMP.*

Response: As presented in the response to EPA's Comment No. 6, Sherwin-Williams' analysis of the benzene data from MW-15/MW-20 supports a conclusion that the additional wells to the west/northwest of the MW-15/MW-20 couplet are not necessary. The benzene levels are relatively low in comparison to the GWQS and the groundwater flow direction is to the southwest. Benzene concentrations in MW-15 ranged from 2.8 ug/l to 16 ug/l in the most recent rounds of sampling, documenting significant reductions from historic levels. Benzene concentrations in MW-20 have remained relatively stable in the 2 – 5 ug/l range.

However, shallow groundwater screening is proposed in this area, and the results are expected to provide additional data regarding the distribution of the benzene. Once the results of the shallow groundwater screening are received, the data will be reviewed and included in the evaluation of whether additional monitoring wells west/northwest of MW-15/MW-20 are needed.

- *The document also states "The benzene is delineated to the east...by MW-1, MW-27 and MW-29." The Department disagrees. As noted previously, the Department believes additional delineation of the extent of product in the shallow groundwater downgradient of the Former Tank Farm A is required. As such the Department recommends an additional boring and potentially a shallow well be installed near the eastern comer of 3 US Avenue (Former Building No. 55) north of US Avenue, across from the former gasoline station and between wells MW-26 and MW-11.*

Response: As requested by the EPA, Sherwin-Williams will conduct a shallow groundwater screening program to evaluate groundwater conditions and define the extent of the residual petroleum across the FMP. The Department's request for an additional shallow well along U.S. Avenue will be evaluated once the results of the shallow groundwater screening program are obtained.

2. *Section 3.1.7 Chlorinated Degradation Products, Page 14: The document states "Neither of these constituents (PCE or TCE) were found in the soil or groundwater during this sampling event..." Please clarify if "these constituents" were found in the FMP in past events. If so, please provide the document name for which this information can be found.*

Response: Neither PCE nor TCE have been found at the site at concentrations greater than the RDCSRS. Neither constituent was detected in any soil sample collected during the recent investigation of the FMP. PCE and/or TCE have been detected in historical soil samples, but at low levels. In some historical samples, the detection limit was greater than the regulatory criteria.

PCE was detected at a concentration greater than the NJDEP Ground Water Quality Standard (1 ug/l) at monitoring wells MW-12 (3J ug/l), MW-17 (2 ug/l), MW-23 (3 ug/l), MW-31 (3 ug/l) and MW-33 (3J ug/l) during a November 1996 monitoring well sampling event. Neither PCE nor TCE was found at a concentration greater than the GWQS in any other sampling event.

Historical soil and groundwater data may be found in the "*Comprehensive Remedial Investigation Report, The Paint Works Site, Gibbsboro, New Jersey*" dated May 2007.

3. *Section 3.2 Deep Groundwater, Page 16: As part of their conceptual model proposal, SW shall also evaluate whether or not benzene in the deeper aquifer is the result of discrete vertical leakage through the confining layer.*

Response: The source area investigation has been designed to assess whether the benzene found in deeper groundwater wells has been transported vertically from the surface or is the result of an off-site, upgradient source. The combination of the soil and groundwater data, along with the observations of site geology, is predicted to provide a basis to support conclusions regarding the benzene source.

The installation of wells both above and below geologic Unit 3, presumed to be the confining unit referred to in the Department's comment, will provide information regarding whether the benzene has been transported through Unit 3.

4. *Section 4.1 Supplemental Shallow/Intermediate Groundwater Investigation, Page 20: The document references that a second round of samples will be collected only from the newly installed wells and their associated well clusters. Please clarify in the text and table which wells will be sampled during the second round of sampling.*

   The document also references that existing wells will be sampled and analyzed for a reduced parameter suite such that TCL Pesticides/PCBs have been excluded from the proposed list of parameters. Please clarify how SW intends to confirm that low level concentrations of pesticides (i.e. beta-BHC, etc.) are the result of particle entrainment in the groundwater if the samples are not analyzed for those parameters.

Response: The text of the revised Groundwater Work Plan has been modified to provide better clarity regarding the proposed groundwater sampling, and a summary table has been prepared. In general, the intent is to collect two rounds of Full-Scan Parameters from all new wells and one round of Full Scan Parameters (first round) and one round of Reduced Parameters (second round) from the existing wells. The Full

Scan and Reduced Parameter lists are defined in the revised FMP Groundwater Work Plan.

Sherwin-Williams is not proposing to evaluate whether or not the pesticides are the result of particle entrainment, just the PAHs. The pesticides were found only intermittently (no well yielded groundwater containing pesticides in both sampling events), and pesticides have not been found in soil. However, PAHs have been found in soil and were found in monitoring wells MW-15, MW-16 and MW-19 at concentrations greater than the GWQS during the two recent groundwater sampling events.

5. *Section 4.1.2 Collection of Filtered and Unfiltered Samples for PAH Evaluation, Page 22: The document references that as part of the PAH evaluation, MW-15, 16 and 19 will be sampled twice approximately 6 months apart. However, the document previously noted that only existing wells in a well cluster will be sampled during the second round. Please clarify if MW-15, MW-16 and MW-19 will be sampled during the second round of sampling.*

Response: The text has been modified to specify that MW-15, MW-16 and MW-19 will be sampled during the second round of sampling.

6. *Section 4.2.1.1 Deep Boring Installation, Page 25: Generally speaking, the Department approves of the proposal to evaluate benzene in the deep groundwater at the FMP. However the Department does not agree that the proposed soil sample collection depth in the deep boring near MW-30 is adequate for this evaluation. The document states for the deep soil boring near MW-30, "Soil sample collection will begin at approximately 55 ft bgs where....geologic unit 2 will be encountered." However, the document also states that information from this boring would be used to select the screen interval for the intermediate well to be installed in "geologic unit 1" midway between the screen intervals of MW-19 and MW-30 (i.e. between 35 and 50ft bgs.). Unless additional justification is provided, soil sample collection in the deep boring near MW-30 should begin at 20 ft bgs.*

Response: The design of the soil sampling program is based on determining whether there exists a source of benzene in geologic units 2,3 or 4 that could be responsible for the benzene observed in the deeper groundwater monitoring wells. It is not likely that constituents found at 20 feet will have an impact on groundwater at 55 – 70 feet.

However, as presented in the revised FMP Groundwater Work Plan, an additional field investigation step has been incorporated into the benzene source evaluation. A direct sensing technology such as a Membrane Interface Probe (MIP) will be used to provide a qualitative understanding of the vertical profile of contamination with depth before the deep boring is installed. This information will be considered when determining where to begin and end soil sample collection.

Additionally, the soil boring will be continuously field screened with a PID, and if there is an observation of elevated PID readings or visual evidence of contamination prior to 55 ft bgs, one or more additional samples will be collected.